

PATENT APPLN. NO. 10/590,442
RESPONSE UNDER 37 C.F.R. § 1.116

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REMARKS

The specification has been amended to correct the name of the preferred compound having two or more urea groups, 1,1'-4(methyl-m-phenylene)bis(3,3-dimethylurea), used as a curing accelerator in the epoxy resin composition of the present invention and described in line 3 from the bottom of page 13, to 1,1'-(4-methyl-m-phenylene)bis(3,3-dimethylurea). Applicants respectfully submit that a person of ordinary skill in the art would readily understand that the original nomenclature, "1,1'-4(methyl-m-phenylene)bis(3,3-dimethylurea)", is not correct and that "1,1'-(4-methyl-m-phenylene)bis(3,3-dimethylurea)" is correct.

1,1'-(4-Methyl-m-phenylene)bis(3,3-dimethylurea) is the chemical name for "Omicure 24", which is used as a curing accelerator in the examples of the present application. The specification identifies "Omicure 24" by the chemical name "2,4-toluenebis(dimethylurea)" (page 36, lines 11-12), which is an alternative name for 1,1'-(4-methyl-m-phenylene)bis(3,3-dimethylurea). These facts are evidenced by the attached copy of a search output from the CAS Registry.

The amendments to the specification do not introduce

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prohibited new matter into the specification and entry of the amendments is respectfully requested.

Claim 1 has been amended to limit the curing accelerator of the claimed epoxy resin composition to 1,1'-(4-methyl-m-phenylene)bis(3,3-dimethylurea) as originally recited in claim 10 (i.e., 1,1'-4(methyl-m-phenylene)bis(3,3-dimethylurea)).

Referring to the Final Action, claims 1-4 and 10-12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Honda et al., US 5,994,429 ("Honda"), in view of Qureshi et al., US 5,087,657 ("Qureshi"). Claims 13-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Honda in view of Qureshi and Middleman, US 5,269,863. Reconsideration of these rejections is respectfully requested in light of the amendment to claim 1.

Qureshi describes 4,4'-methylene bis(phenyl-dimethylurea) as an example of a curing accelerator useful in the epoxy formulations disclosed therein (column 5, lines 28-29, and "Omicure 94" used in the working examples of the document). In the present specification, 4,4'-methylene bis(phenyldimethylurea) is identified as "Omicure 52."

However, Qureshi does not mention 1,1'-(4-Methyl-m-phenylene)bis(3,3-dimethylurea) (Omicure 24) as a possible accelerator.

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Both Omicure 52 and Omicure 24 have two (2) urea groups per one molecule. Since Omicure 24 has a smaller molecular weight than Omicure 52, Omicure 24 provides a greater number of urea groups than Omicure 52 per the same weight. For this reason, when Omicure 24 is used as compared to when Omicure 52 is used, an accelerated curing can be achieved and a high flame retardance, which is caused by a synergistic action with a phosphorus compound [C] such as red phosphorous, can be imparted with a smaller addition amount.

These advantageous and unexpected effects are supported by the working examples of the present specification. For example, a comparison between Examples 2, 7, and 22, which employ the same components in the same amounts except for component [D], shows: (i) that Omicure 24, with an amount as small as five (5) parts, can impart a higher flame retardance than DCMU-99, and (ii) that as much as seven (7) parts of Omicure 52 is required for imparting the same flame retardance as five (5) parts of Omicure 24. These results are neither taught nor suggested by the combination of Qureshi and Honda and rebut any prima facie obviousness considered by the Office to be supported by the combination.

The foregoing is believed to be a complete and proper response to the Final Office Action dated February 19, 2010.

In the event that this paper is not considered to be timely

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filed, applicants hereby petition for an appropriate extension of time. The fee for any such extension may be charged to our Deposit Account No. 111833.

In the event any additional fees are required, please also charge our Deposit Account No. 111833.

Respectfully submitted,
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L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2010 ACS on STN

RN 17526-94-2 REGISTRY

ED Entered STN: 16 Nov 1984

CN Urea, N, N'-(4-methyl-1,3-phenylene)bis[N', N'-dimethyl- (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Urea, 1,1'-(4-methyl-m-phenylene)bis[3,3-dimethyl- (8CI)

OTHER NAMES:

CN 1,1'-(4-Methyl-m-phenylene)bis(3,3'-dimethylurea)

CN 1,1'-(4-Methyl-m-phenylene)bis(3,3-dimethylurea)

CN 2,4-Bis(dimethylaminocarbonylamino)toluene

CN 2,4-Tolylenebis(N', N'-dimethylurea)

CN N, N'-Bis(dimethylcarbamoyl)-2,4-toluidine

CN N,N-(4-Methyl-1,3-phenylene) bis(N', N'-dimethylurea)

CN NSC 375994

CN Omicure 24

CN Omicure U 24

CN Omicure U 410

CN UD 34

DR 38775-63-2

MF C13 H20 N4 O2

CI COM

LC STNFiles: BEILSTEIN*, CA, CAPLUS, CASREACT, CHEMCATS, CHEMLIST, CSChem,
IFIGDB, IFIPAT, IFIUDB, TOXCENTER, USPAT2, USPATFULL, USPATOLD

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

